**The long and short of Big Block Buick water pumps**



***Dimensions of Big Block Buick water pumps factored from gasket surface.***

Difference of pulley placement of short vs long neck water pump is 5/8 inch

**Buick 455 Water Pumps**

by Scott Moody and Mark DeConti

In doing a roundup of all the aftermarket water pump part numbers I could find, I came across very some interesting results. Looking at the pictures off the websites (where available) I eventually noticed differences in the impellers. Some impeller blades are long and go all the way to the edge of the impeller disc. Some are shorter and don't reach the edge. While others are medium in length. Does this have an effect on cooling? Maybe. I would like my blades to be full length. How about impeller blade depth? Some look shallower and some look deeper, it's hard to tell just from pictures.

Here they are arranged by tall or short neck. The short ones are for 70 and earlier (I think) and the tall ones are for 71 and newer (I think). If this is incorrect please let me know. The info presented (where available) is: manufacturer name, new or rebuilt, part number, price, and impeller blade length.

|  |  |
| --- | --- |
| Short neck, early models:A1 Cardone new 5513141 $60 medA1 Cardone reman 58111 $25 longAC Delco new 252295 $68Airtex new AW821 $55ASC indust. new WP384 $59Carter new FP1400 $87 medGMB new 130821 $64 shortMaster Parts new CP821 $64NAPA new NWP55821 $67 shortBosch 98016Eastern 181080Borg Warner P494Parts Master 3-384Tall neck, later models:A1 Cardone new 5513112 $28 longA1 Cardone reman 58113 $15 shortAc Delco new 252122 $61Airtex new AW1045 $49ASC indust. new WP451 $46Carter new FP1457 $80 longGMB new 1301400 longMaster Parts CP1045NAPA new NWP551045 $62 longBorg Warner P611Bosch 98031Eastern 18-318Parts MAster 3-451 | http://www.buickperformanceclub.com/Shortimpeller.jpg |

Prices are from: rockauto.com, napaonline.com. advanceauto.com, autozone.com, oreilly.com .
Cross reference information was taken from ASC industries and Airtex Products websites.
Note the commonality between different manufacturer's part numbers.
All pictures that I found so far were of 5-blade cast impellers, not stamped nor 6-blade.

It's interesting that the only short neck pump that I can confirm has long blades is the reman cardone unit, 58111. The later pumps have more long blade units.

|  |  |
| --- | --- |
| http://www.buickperformanceclub.com/Shortimpeller.jpg | http://www.buickperformanceclub.com/Longimpeller.jpg |
| Five short impeller blades | Five long impeller blades |
| http://www.buickperformanceclub.com/6bladeimpeller.jpg |
| Example of a 6 blade impeller: |

Photo courtesy of Dave Steele

|  |  |  |
| --- | --- | --- |
| **Pump Style** | **Pulley Ratio** | **Pulley Sizes** |
| Five blade | A/C (HD) | 1.311 | Balancer Pulley (7 3/8") diameter much larger asWater pump pulley (5 5/8")Not sure why some pumps have longer blades. |
| Six blade | NON A/C | 0.926 | Balancer Pulley (6 1/4") almost the same as theWater pump pulley (6 3/4") |

The NOS correct part number pump for a non A/C application 67 BBB has 6 blades. New or NOS A/C application pumps sourced during the last 30+ years have been 5 blade.

Stage 1 cars came with heavy duty cooling which included the clutch fan, 3 row radiator and the A/C pulleys with a 5 blade water pump. A/C equipped 455 engines also came equipped with heavy duty cooling systems.

In 1971 the water pump length became longer and the pulleys changed part numbers. The majority for 71 on up cars had A/C. However non A/C still used the 67-70 6 blade pump with different pulleys.

Using A/C pulleys on a 6 blade will flow coolant too fast, and using non A/C ones with the 5 blade pump can cause overheating at slow speed or idle.
I tried mixing types over the years and had these problems.
My 2 cents on this,
Mark DeConti

Water pump & Balancer pulleys

The first breakdown is by year. 67-70 used the short length water pump (3 1/4 inch from pulley mount flange to gasket surface) and 71-76 used the long length water pump (3 7/8 inch from pulley mount flange to gasket surface). The part numbers for Water Pump Pulley and Balancer Pulleys are as follows

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Cooling** | **Pulley** | **Water Pump Pulley** | **Balancer Pulley** |
| **Year** | **System** | **Ratio** | Part # / Diameter / Depth | Part # / Diameter / # Grooves |
| 67-70(Short) | Std | 0.926 | 1375141 / 6 3/4" / 2-1/8" | 1375142 / 6 1/4" / two |
| 67-70(Short) | HD | 1.311 | 1375146 / 5 5/8" / 2-1/8" | 1375143 / 7 3/8" / three \* |
| 71-73(Long) | Std | 1.087 | 1238156 / 5 3/4" / 2-7/8" | 1235779 / 6 1/4" / two \* |
| 71-73(Long) | HD | 1.261 | 1235778 / 5 3/4" / 2-7/8" | 1235777 / 7 1/4" / three \* |

**Note: Balancer pulleys marked \* have a 5 3/4“ power steering groove**

 **Std – Non A/C equipped cars / HD – A/C equipped or Stage 1 cars**

 **Water pump pulley: Std – single groove / HD - double groove**



TA Performance Billet Pulleys Available

|  |  |  |  |
| --- | --- | --- | --- |
|  | A | B |  |
| *Underdrive, short* | 2-1/8 | 5-7/8 | 400-430-455 |
| *Underdrive, long* | 2-7/8 | 5-7/8 | 400-430-455 |
| *Overdrive, short* | 2-1/8 | 5-3/8 | 400-430-455 |
| *Overdrive, long* | 2-7/8 | 5-3/8 | 400-430-455 |

*“Short” Pulleys replace OE P/N 1375146* 5 5/8" two groove Standard drive

Double groove A/C pulleys

1970 455 Water pump pulley, for short nose pump. w/air 1375146 and the diameter 5 5/8"

1971 455 Water pump pulley for long nose pump. Part #1235778

1972 GS. Water pump pulley 1235778 and the diameter 5 3/4" two groove.